

Causes for Gasoline & Diesel Price Increases in California

MAY MONTHLY UPDATE

California Energy Commission

May 1, 2003



TABLE OF CONTENTS

INTRODUCTION.....	1
I. CURRENT PRICE ASSESSMENT.....	1
RECENT CALIFORNIA DIESEL FUEL PRICES.....	1
RECENT CALIFORNIA GASOLINE PRICES.....	2
II. CONTRIBUTING NATIONAL AND WORLDWIDE MARKET FORCES	7
WORLD OIL PRICES	7
PHASEOUT OF METHYL TERTIARY BUTYL ETHER (MTBE) AND TRANSITION TO SUMMER GASOLINE IN CALIFORNIA	7
Ethanol Prices	7
MTBE Phaseout and Reduced Gasoline Production	7
LOGISTICAL ISSUES UPDATE	8
REFINERY OPERATIONS.....	8
INVENTORIES	8
Crude Oil Inventories.....	8
Gasoline Inventories.....	9
ARIZONA GASOLINE SUPPLY UPDATE.....	10
III. CALIFORNIA FUEL COSTS AND APPARENT MARGINS	11
TAXES	11
CALIFORNIA BRANDED RETAIL GASOLINE COST ANALYSIS	11
CALIFORNIA UNBRANDED RETAIL GASOLINE COST ANALYSIS	12
CALIFORNIA RETAIL DIESEL COST ANALYSIS	13
CALIFORNIA UNBRANDED RETAIL DIESEL COST ANALYSIS.....	14
IV. PETROLEUM INDUSTRY INFORMATION - RESPONSE TO INFORMATION REQUESTS	15
V. CONCLUSIONS	16

Introduction

On March 13, 2003, Governor Davis asked the California Energy Commission (Energy Commission) to investigate the causes for the rapid rise in gasoline and diesel fuel prices in February and March. This report presents the Energy Commission's May 2003 update.

I. Current Price Assessment¹

The first report included weekly data through March 17, 2003. This update incorporates wholesale price data through April 21, 2003 and retail price data through April 28, 2003 — an additional five and six weeks of observations respectively.

Recent California Diesel Fuel Prices

Figure 1 provides a comparison of wholesale diesel fuel prices between Los Angeles and New York for 2003 through April 21. Since early March, Los Angeles wholesale diesel prices have fallen from a high of \$1.18 per gallon to a low of 77 cents per gallon in early April, which is consistent with prices in New York and elsewhere in the U.S.

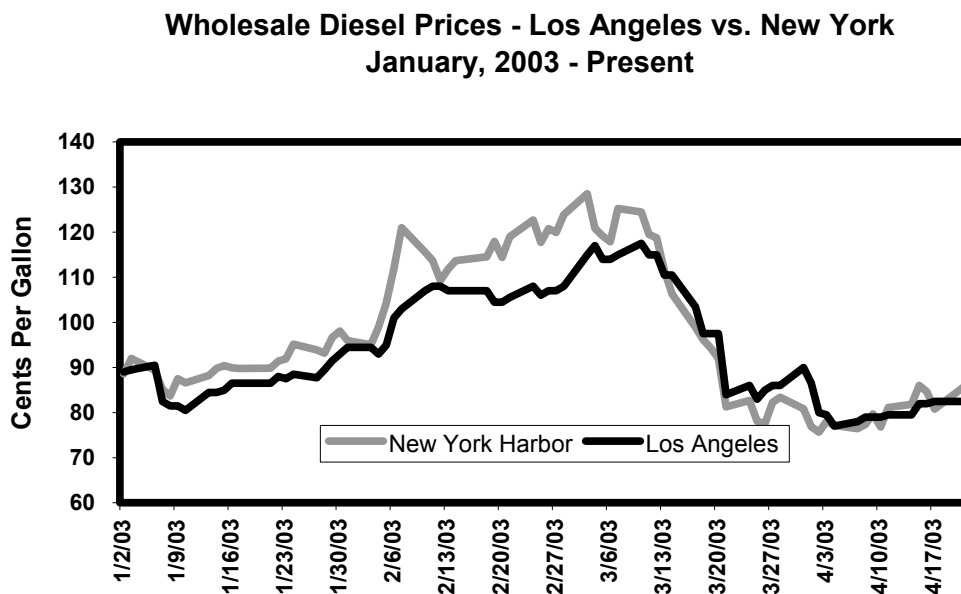


Figure 1

¹ Note: All gasoline and diesel price data series in chapters I and II are provided by EIA.

Since prices peaked on March 17, 2003, California retail diesel prices have dropped 27 cents a gallon while the U.S. average price has declined 24 cents a gallon. Figure 2 compares California retail diesel prices and U.S. averages through April 28, 2003. California's retail diesel prices are slightly higher than U.S. averages due to tighter emissions requirements and higher taxes.

Retail Diesel Prices - California vs. U.S.
January, 2003 - Present

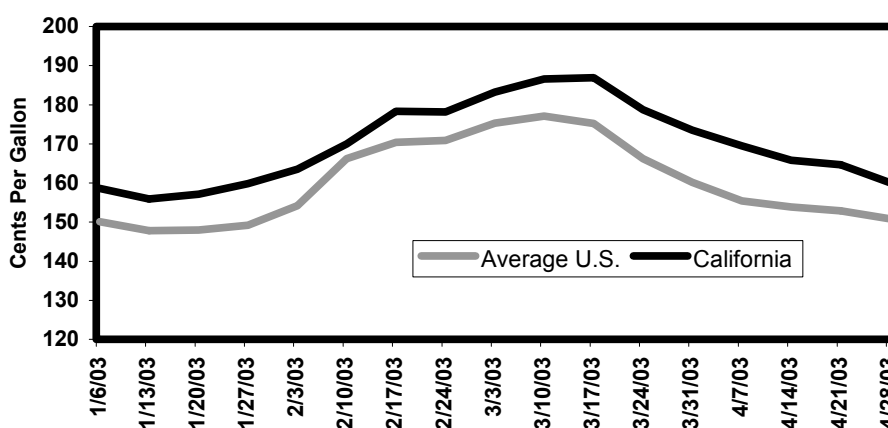


Figure 2

Overall, California diesel fuel prices are consistent with diesel fuel prices elsewhere in the U.S.

Recent California Gasoline Prices

Figure 3 compares Los Angeles wholesale gasoline prices with New York prices through April 21, 2003. Since the high of \$1.52 on March 17, 2003, Los Angeles wholesale prices have fallen dramatically to 95 cents per gallon in early April. The price differential for wholesale gasoline between Los Angeles and New York is now about 6 cents per gallon, well below the historical average.

It appears that the California petroleum industry has recovered from the various problems it experienced during the early part of 2003.

**Wholesale Gasoline Prices - Los Angeles vs. New York
January, 2003 - Present**

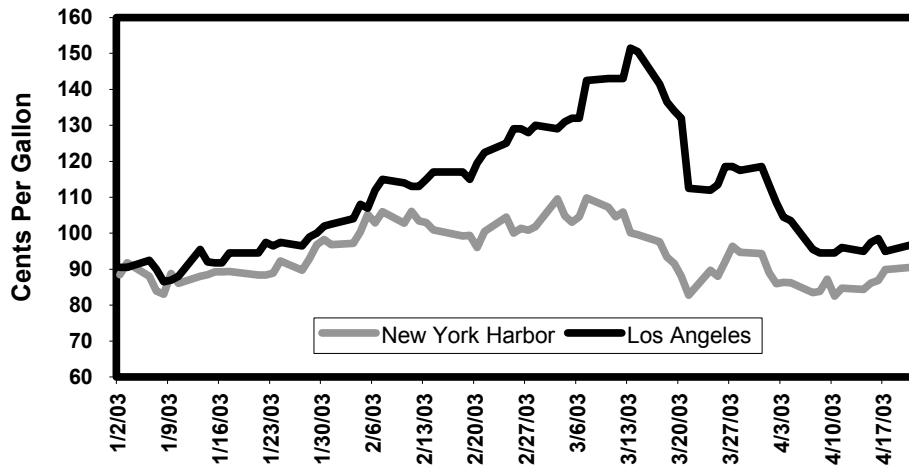


Figure 3

**Retail Gasoline Prices - California vs. U.S. All Formulations
January, 2003 - Present**

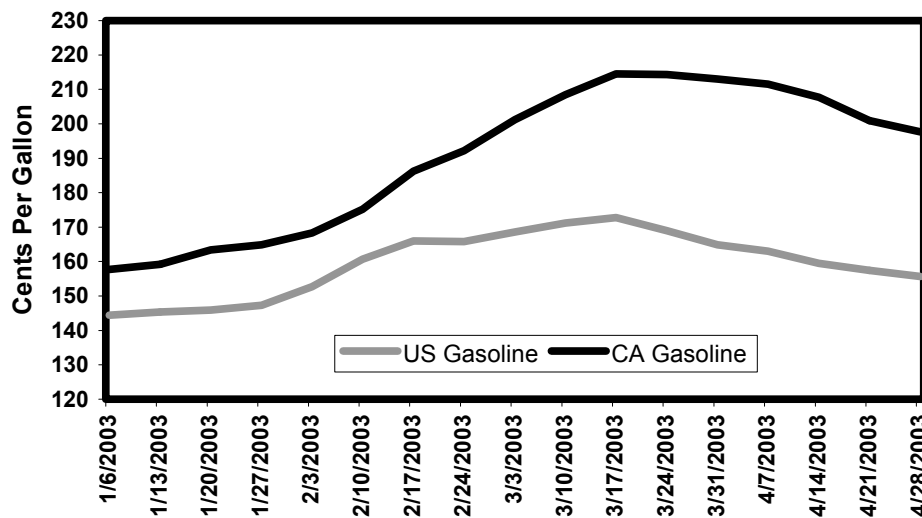


Figure 4

Figure 4 displays retail gasoline prices in California as well as the U.S. averages through April 28, 2003. Gasoline prices peaked in California and across the U.S. around March 17. At that time, the U.S. average retail price hit \$1.73 per gallon while the average California retail gasoline price peaked at \$2.15, 42 cents higher than the U.S. average.² Since then, retail gasoline prices have fallen slowly in California consistent with the slow fall in retail prices elsewhere in the U.S.

Table 1 compares the decrease in retail prices since the March 17 high between six major cities in the U.S. The average decrease in price is 15.6 cents per gallon. In comparison, prices in Los Angeles and San Francisco have fallen by 18.2 cents and 16 cents respectively.

Table 1

Retail City Price Comparison						
March 17 - April 28, 2003						
	Chicago	Denver	Houston	New York	Los Angeles	San Francisco
March 17, 2003	175.6	165.7	159.6	171.9	213.4	219.0
March 24, 2003	169.1	165.2	156.7	171.4	213.7	217.5
March 31, 2003	160.6	163.2	154.9	169.7	212.8	216.5
April 7, 2003	158.4	160.1	151.0	168.4	211.2	214.6
April 14, 2003	152.6	154.7	147.5	166.9	208.5	210.4
April 21, 2003	155.9	149.9	145.2	165.4	198.6	206.2
April 28, 2003	160.9	148.0	141.3	163.5	195.2	203.0
Total Decline	14.7	17.7	18.3	8.4	18.2	16.0
Average Total Decline (all cities)	15.6					

The decline in retail prices in California appears to be consistent with the decline in retail prices elsewhere in the U.S.

Retail Gasoline Price Lags and Price Asymmetry

The petroleum production and distribution system is highly fragmented geographically. The entire process of producing a gallon of gasoline from beginning to end includes: the extraction of crude oil, its transportation to refineries, the distillation into gasoline and other petroleum products, and the final

² Please see the March 28, 2003 Report to the Governor for a thorough discussion of the problems the Energy Commission believes caused the 42 cent price disparity identified above.

distribution to retail dealers through pipelines and tanker trucks. This process occurs over thousands of miles and many weeks.

Just as there are delays in the transmission of inputs (crude oil) to outputs (retail gasoline), there are also delays in the transmission of prices. Specifically, there is usually a several week lag between increases or decreases in crude oil prices relative to retail gasoline prices. In addition, the lag is usually several weeks longer when crude oil and retail gasoline prices are declining.

Figure 5 displays California retail gasoline prices and Alaska North Slope (ANS) crude oil prices from January 2003 through April 21, 2003.³ This is a fairly typical example of the relationship between crude oil and retail gasoline prices during a crude oil price spike. Notice that gasoline prices peak several weeks after crude oil prices peak. Also notice that while crude oil prices fall quickly, retail gasoline prices start falling later than crude oil prices and also fall more slowly.⁴

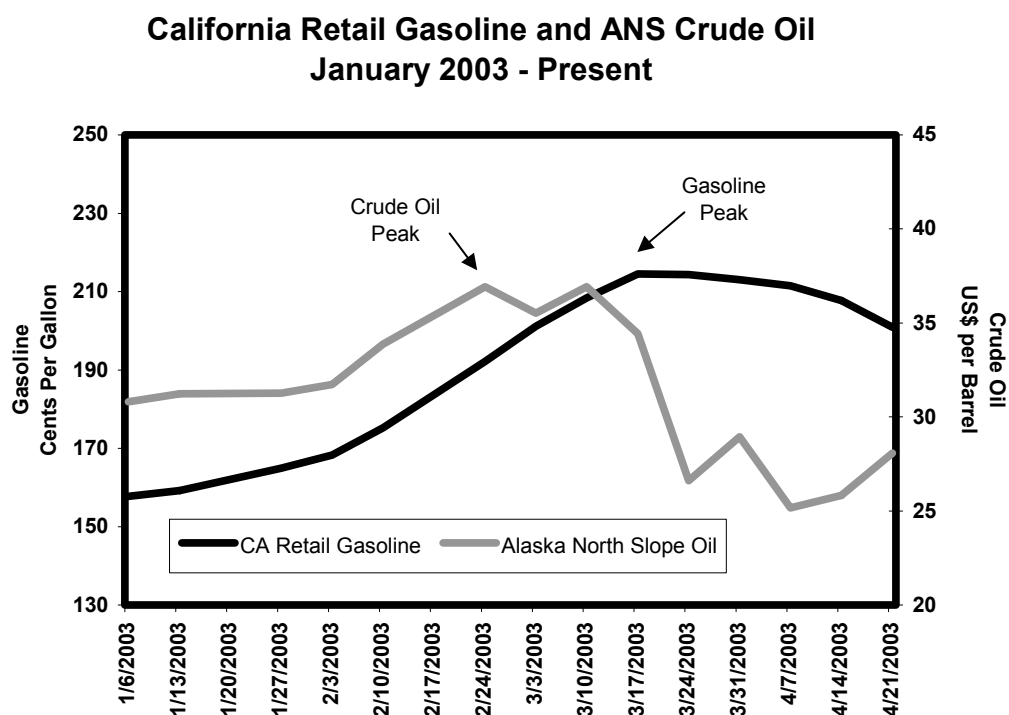


Figure 5

³ ANS Crude Oil prices are sourced from the Wall Street Journal.

⁴ It should be noted that it is unusual for crude oil prices to fall as rapidly as they did during the Iraq war last month. The last time crude oil prices fell this quickly was during the Gulf War in 1991.

Although there is no consensus among economists as to why retail gasoline prices fall more slowly than they rise,⁵ the fact that California's retail gasoline prices have fallen slowly since the March 17 peak is not surprising. Retail prices are falling slowly throughout the U.S. as well. Retail gasoline prices will likely take several more weeks before completely dissipating this recent price spike after which California's retail prices should return to more typical price differentials relative to retail prices elsewhere in the U.S. Historically, California's retail gasoline prices are between 10 to 20 cents higher than the U.S. average.

⁵ For example, see Borenstein, Cameron and Gilbert (1997), *Do gasoline prices respond asymmetrically to crude oil price changes?*, The Quarterly Journal of Economics, vol. 112, for an excellent discussion of some of the competing theories on retail price asymmetry.

II. Contributing National and Worldwide Market Forces

World Oil Prices

World crude oil prices have decreased sharply since the war in Iraq began. The price of Alaska North Slope oil to the West Coast fell 34 percent, from \$34.58/barrel on March 17 to \$22.69/barrel on April 28. The Iraqi oil fields were largely captured intact, although there was significant looting of equipment in northern fields around Kirkuk and minor damage to port facilities in the south. A legal framework for oil sales must be developed, but oil exports should resume relatively quickly. Exports from elsewhere in the Middle East, particularly Saudi Arabia, increased substantially during this period to offset the loss of Iraqi oil. Meanwhile, oil production and exports from Nigeria and Venezuela are recovering from labor disputes.

To stabilize falling oil prices, the Organization of Petroleum Exporting Countries (OPEC) announced plans on April 24 to cut oil output by 2 million barrels a day beginning in June 2003. The new production target, however, is about 900 million barrels per day higher than last year's production ceiling of 24.5 million barrels. At the meeting, OPEC's president noted that current world oil production and expected lower demand will lead to a large oversupply in the second quarter of 2003, suggesting that OPEC would have to reduce production to avert a price collapse. The April meeting produced mixed results, however, because production quotas excluded oil from Iraq (a member of OPEC).

Phaseout of Methyl Tertiary Butyl Ether (MTBE) and Transition to Summer Gasoline in California

Ethanol Prices

Using the posted terminal price of ethanol as an indicator of contract prices nationwide in April, ethanol contract prices appear to have declined between mid-March and mid-April in California and the Midwest as well. Thus, ethanol prices did not contribute to higher retail gasoline prices in April. As reported last month, ethanol prices remain lower than gasoline prices.

MTBE Phaseout and Reduced Gasoline Production

The majority of California's refiners have completed the transition from MTBE to ethanol. As previously reported, nearly 70 percent of California's gasoline contains ethanol at a concentration of 6 percent by volume. The production of

the new gasoline, initiated in January of 2003, continues without any significant problems directly related to the use of ethanol.

Logistical Issues Update

Logistical constraints in Southern California ports continue to cause intermittent delays of gasoline deliveries from Northern California to Southern California. These constraints have mainly impacted gasoline supplies to independent marketers although the temporary run-outs of gasoline are far less frequent now than during the last week of February and the first weeks of March.

Unbranded gasoline prices are now below branded prices, which is typical following a price spike. In southern California, this situation indicates that the logistical problems have not translated into supply problems with a possible significant affect on prices. During the recent price spike in February and March, unbranded prices were greater than branded prices, which is typical before and immediately after a gasoline price spike. In other words, California's high retail gasoline prices are not related to any temporary logistical problem.

Refinery Operations

In early April, all California's major gasoline producing refineries returned to service. Last month's report highlighted a number of refinery difficulties that resulted in lower gasoline production throughout the state. Unplanned refinery problems and several refiners experienced extended maintenance periods. The repairs and maintenance during the previous month resulted in increased production of gasoline and other petroleum products for April. Gasoline production is now averaging over a million barrels per day, which is normal when all refineries are operating at full capacity.

Inventories

As current prices decline relative to expected future prices, petroleum markets will tend to save an increasingly higher proportion of current production for future delivery. As a result, crude oil and gasoline inventories should continue to increase as crude oil and wholesale gasoline prices continue to fall.

Crude Oil Inventories

Since the March 28, 2003 report, U.S. crude oil inventories have been rising steadily from a 25 year low of 270 million barrels. Nationwide crude oil inventories now stand at 286 million barrels. Crude oil inventories will continue to build as long as crude oil prices keep dropping. Figure 6 displays U.S. crude oil inventories for 2003 through April 18, 2003.

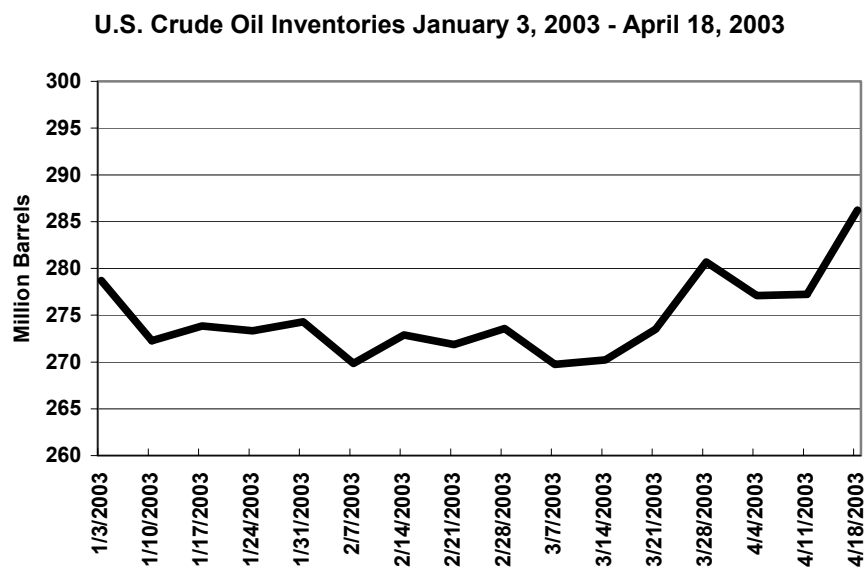


Figure 6

Gasoline Inventories

Figure 7 displays total finished gasoline inventories for PADD 5.⁶ Since an early March low of 28 million barrels, PADD 5 inventories have increased by almost 4 million barrels to approximately 32 million barrels. This level of inventory is about equal to the long-run average for PADD 5.

⁶ Note: EIA publishes weekly gasoline inventories only by Petroleum Area Defense District (PADD), not by state. Since California comprises over 70 percent of PADD 5, the changes in the level of this data series (Figure 6) are good proxy for California.

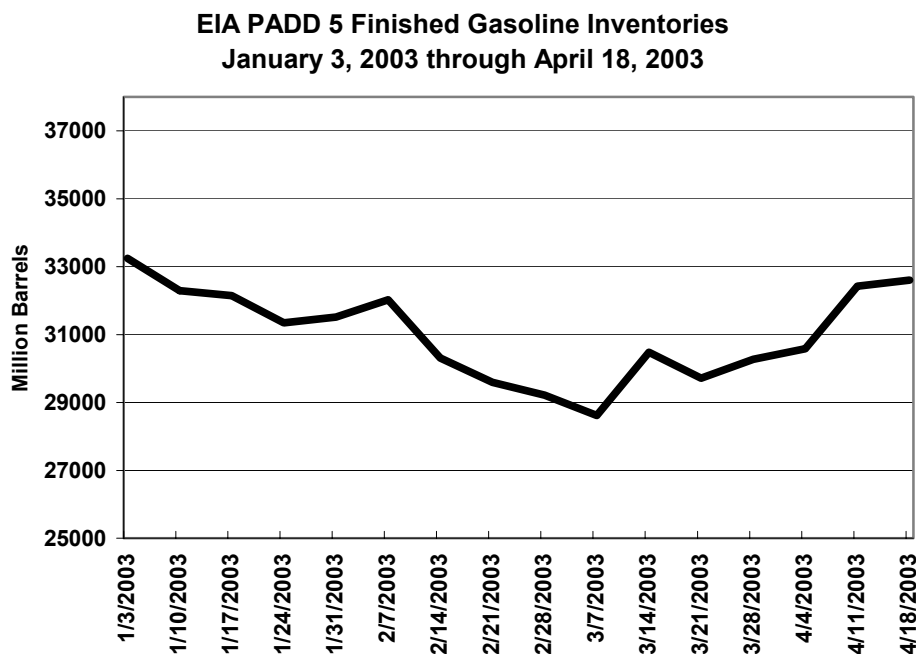


Figure 7

As was concluded previously with wholesale gasoline prices, the current level of inventories indicates that the problems California's petroleum refiners had experienced early this year have completely subsided.

Arizona Gasoline Supply Update

The supply problems in Phoenix have been corrected and deliveries by pipeline to this market from refineries located in Western Texas and Southern California have returned to normal levels. The surge of gasoline to Arizona from some Southern California refineries, which had contributed to California's recent price spike, has abated. California's enduring high retail gasoline prices are not due to any supply issues associated with Arizona.

III. California Fuel Costs and Apparent Margins

At the outset, it is important to make a clear distinction between the cost of producing a gallon of gasoline and the ultimate price in the marketplace for that same gallon. If the market is competitive, prices will equal the actual production and distribution costs plus a fair profit margin for refiners, distributors, and retailers. As in all other volatile commodity markets, however, this relationship will only hold on average.⁷

Taxes

Until recently, the federal excise tax on gasoline was uniformly 18.3 cents per gallon. However, the federal excise tax is 15.4 cents per gallon if a gasoline blend falls within the definition of gasohol (i.e., it has at least 5.7 percent of ethanol in its blend). California's Phase 3 reformulated gasoline falls into this category, and most refiners in California are now producing Phase 3 gasoline. In addition, a federal fee of 0.1 cent per gallon is added to finance a trust fund to address leaking underground storage tanks. The federal excise tax on on-road diesel fuel is 24.4 cents per gallon (with no fee for the trust fund).

The state of California adds an 18-cent excise tax on each gallon of gasoline and diesel and stipulates that the combined federal and state excise taxes to be no less than 33 cents per gallon.

The current state sales tax is 7.25 percent, of which 6 percent is the state portion and 1.25 percent is the local government portion. Many communities collect an additional local sales tax, resulting in sales taxes ranging from 7.25 percent to 8.75 percent depending on the community.

California Branded Retail Gasoline Cost Analysis

Most branded gasoline dealers are franchisees and are under contract with branded refiners to purchase their gasoline at Dealer Tankwagon (DTW) prices. DTW prices are set by the branded refiners and include transportation costs from the loading racks to the dealers' stations. DTW prices can vary significantly between different refiners and between different regions in the state, but are almost always higher than the branded rack price.⁸ Because the "Distribution and Marketing Costs" in the table below are derived from *terminal rack prices*

⁷ The following data sources were utilized in preparing the diagrams in chapter III; diesel and gasoline branded and unbranded rack prices are provided by OPIS, ANS crude oil prices and all retail prices are provided by EIA.

⁸ Since the Energy Commission does not collect DTW prices, we cannot confirm the extent to which DTW prices differ from OPIS branded rack prices.

and not *DTW prices*, an actual dealer margin, inclusive of costs and profits, cannot be inferred.

Table 2
California Retail Gasoline Cost Analysis

	Branded Gasoline			Unbranded Gasoline		
	April 2003	April 2002	1997 - Present	April 2003	April 2002	1997 - Present
Retail Prices	2.04	1.61	1.47	1.84	1.57	1.48
Federal Excise Tax	0.18	0.18	0.18	0.18	0.18	0.18
State Excise Tax	0.18	0.18	0.18	0.18	0.18	0.18
State and Local Sales Tax	0.15	0.12	0.11	0.15	0.12	0.11
Crude Oil Cost	0.62	0.60	0.51	0.62	0.60	0.51
Refiner Costs and Profits	0.68	0.44	0.39	0.56	0.31	0.35
Distribution Costs, Marketing Costs, and Profits	0.23	0.09	0.10	0.35	0.22	0.15

The EIA's gasoline prices for April 2003 show California's prices declining from their previous highs in March. Prices peaked on March 17 at \$2.15 per gallon, with the latest EIA survey reporting the average price now at \$1.98 per gallon.

The apparent refiner margins for both MTBE and ethanol based gasoline have increased from their March 2003 levels of Table 2 to their current level of 68 cents per gallon for April 2003. The refiner margin is the difference between crude oil prices and the wholesale price of gasoline. Wholesale prices dropped in April by 13 cents per gallon. Table 2 shows the monthly average retail prices for California, as report by the EIA.

California Unbranded Retail Gasoline Cost Analysis

The prices reported in the diagram below are average retail prices for California as reported by EIA.⁹ While EIA only reports a single "average" price for a given day, the reality is that actual street prices in major metropolitan areas can vary by as much as 30 cents or more on that same day. This is especially so when gasoline prices are falling. Since the unbranded dealers typically price their gasoline below the branded dealers (this is also especially true when prices are falling), it is likely that magnitude of the "Distribution and Marketing Costs" in table 2 are being somewhat overstated, especially for the month of April 2003.

⁹ While the Energy Commission does collect a variety of wholesale price data, we rely on EIA for all retail price data used in our analyses.

The statewide monthly average wholesale price for unbranded MTBE and ethanol blended gasoline is \$1.21 per gallon, down 25 cents from March 2003. The monthly average unbranded refiner margin is 56 cents per gallon, down 14 cents from the previous month.

Refiner margins based on unbranded rack prices are 12 cents per gallon less than branded margins but above the historical average. Part of this may be due to the split between unbranded gasoline types. For the remainder of 2003, both MTBE-based and ethanol-based gasoline will be used in California. By the end of 2003, the use of MTBE-based gasoline will end.

Federal excise taxes are factored into the calculation based on 18.3 cents per gallon plus 0.1 cents per gallon for the Leaking Underground Storage Tank fund. Federal excise taxes are 3 cents per gallon lower for those volumes of gasoline blended with ethanol. This 3 cent difference will be reflected in the margin calculations beginning January 2004 when MTBE is eliminated from California's gasoline.

California Retail Diesel Cost Analysis

Table 3

California Retail Diesel Cost Analysis

	Branded Diesel			Unbranded Diesel		
	April 2003	April 2002	1997 - Present	April 2003	April 2002	1997 - Present
Retail Prices	1.65	1.44	1.44	1.65	1.44	1.44
Federal Excise Tax	0.24	0.24	0.24	0.24	0.24	0.24
State Excise Tax	0.18	0.18	0.18	0.18	0.18	0.18
State and Local Sales Tax	0.12	0.11	0.11	0.12	0.11	0.11
Crude Oil Cost	0.62	0.62	0.51	0.62	0.62	0.51
Refinery Costs and Profits	0.28	0.17	0.26	0.26	0.16	0.26
Distribution Costs, Marketing Costs, and Profits	0.20	0.15	0.14	0.22	0.16	0.14

California Unbranded Retail Diesel Cost Analysis

The long-term apparent refiner margins for diesel continue to remain close to historical averages. While distribution and marketing margins in April 2003 increased 6 cents over April 2002, the Energy Commission anticipates that further drops in retail prices in the near future will bring margins closer to their historical averages. Additionally, as seasonal demand for diesel fuel by the agriculture industry declines, retail diesel prices should return to their usual seasonal pattern.

IV. Petroleum Industry Information - Response to Information Requests

Since the first *Gasoline Price and Diesel Report* was published, Energy Commission staff identified the type of information that would be useful for the industry to begin providing immediately on a voluntary basis. Specifically, the Energy Commission requested weekly data on imports, exports and intrastate shipments of petroleum products, inventories (pipeline, tank and marine), prices (regional retail, wholesale and Dealer-Tank-Wagon) for all transportation fuels. In addition, the discussions involved the forms and instructions related to providing that information. Energy Commission staff also initiated a discussion with federal government counterparts (Energy Information Agency) to seek ways to reduce duplicative reports by conforming reporting requirements.

Some industry participants have voluntarily started providing some of the data requested by the Energy Commission on a weekly basis. However, the difficulties of supplying weekly data and defining uniform reporting standards have added to the complexity of achieving full compliance.

To date, industry has been helpful in identifying issues regarding reporting requirements. The Energy Commission staff is hopeful these issues can be resolved between this report and its next report to the Governor and that the petroleum industry will continue providing the information requested by staff.

V. Conclusions

After carefully examining the relevant data, it appears that the industry problems unique to California, as identified in the March 2003 report, have been completely alleviated. This conclusion is reflected most notably in the sharp reduction in California wholesale gasoline prices and rising inventories throughout the state. In fact, California's wholesale gasoline prices have now fallen below their historical norms relative to gasoline prices elsewhere in the U.S., and inventories are now very near their historical averages.

The fact that California's retail gasoline prices have fallen more slowly than wholesale gasoline prices is a normal phenomenon. Retail prices are falling slowly throughout the U.S. as well. It will likely take retail prices several more weeks before completely dissipating the recent price spike that peaked in mid-March. Subsequently, California's retail prices should return to a more typical price differential relative to retail prices elsewhere in the U.S. Historically, California's retail prices are between 10 to 20 cents higher than the U.S. average.

The Energy Commission will continue to review the petroleum product price trends in California and will provide another update next month.